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ELECTRONIC ENTERTAINMENT



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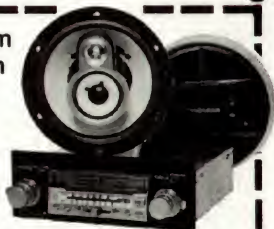
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TALKING GAMES

*Here comes the electronic psych-out:
"OK, bigmouth, what's your next move?"*

Electronic games are heading in many directions at once, the most exciting of which is the interaction of player and machine through speech. Three new games that represent the state of the art in speech synthesis are **GORGAR** and **FIREPOWER** by Williams and **MILTON** by (you guessed it) Milton Bradley.



Gorgar is the first pinball machine of its kind: It speaks to you as you play. Gorgar's husky voice uses seven words to form eight different phrases. For example, your ball is held in the Snake Pit while Gorgar says, "Me got you!" On the other hand, lighting the correct series of targets makes Gorgar say, "Me hurt!" and advancing the score continuously accelerates the thumping of Gorgar's heartbeat until a frenzied pitch is reached.

Recently, Williams introduced its second speech-generating pinball game, Firepower. It is a great improvement over Gorgar, using 115,000 bits of memory and a microcomputer to produce a vocabulary of 21 phrases. The best is yet to come, however, for this fall, Williams will put a machine on the market that speaks in two languages—English and French. (Who says games aren't educational?)

Milton is also a game that talks to you—but you won't find it in the arcade. Milton is a tabletop party game for one or two players, retailing for \$55. Unique among adult games designed for home use, Milton uses an

electronic speech computer chip to generate phrases. The object is to elicit phrases in a sensible order by pressing the correct sequence of buttons. And as if being wrong weren't bad enough, Milton delivers verbal punishment for misplays.

As much fun as it sounds like to have Gorgar and Milton talk to you during the games, wouldn't you rather talk to them? The idea of speech-activated toys and games was introduced two years ago in the form of motorized vehicles that respond to sets of preprogrammed vocal commands. Say "Turn left" and they turn left. Say "Stop" and they stop. You can imagine how children reacted to the sense of control these new toys gave them. You can also imagine the expressions of household pets being attacked by dump trucks.

But suppose you had a two-player electronic board game that had no pieces—nothing to move physically across the playing area—and left each player free to think and react as fast as possible. Well, Mattel introduced it at the 1980 Consumer Electronics Show in Las Vegas as **TALK TO IT**, the first game of its kind.

Talk To It is an electronic board and two small microphones, with which you can play three games: Roller Race, Math and Sea Battle. In Roller Race, each player has a team of five skaters, and the object is that of roller derby—to beat the other team by skating faster and continually knocking them out of the arena. The red and green skaters travel around the skating arena as dots of light, responding to the verbal commands of players. Speaking "Yes" or "No" into your microphone while your skaters are in the speed zones causes them to go faster or slower. Six speeds with both forward and backward motion are all controlled verbally.

The game recognizes only the voices of the original players and will not confuse them with kibitzers or with each other. Talk To It will talk (react) only to legal commands. Technically, the machine is very sound and fun to play with, but look for more challenging games in the future. Industry spokespeople admit to developing sophisticated voice-activated board games for the adult market, and we can expect to see a number of them on the shelves by 1982.

—PHIL WISWELL

PLAYBOY PANEL: THE ELECTRONIC FUTURE

How will you be informed and entertained in the Eighties? Five experts from the worlds of audio, video and computer technology take a look into the living room of tomorrow

Playing prophet in the electronic-entertainment field is a tricky business. Thomas Edison, who started it all by inventing and marketing the phonograph, thought his talking machine would be only an office and educational tool, not a home-entertainment medium. Later, however, he was understandably willing to concede his shortsightedness and profit from the consumer market for the phonograph.

Despite such lapses in prognostication as Edison's, gazing through a crystal ball at electronic entertainment is more fascinating than ever before, as the future thunders down on us faster and faster—with an ever-increasing pay load of new products and new possibilities. To find out what the Eighties may offer, we assembled five of the most forward-looking figures in the field. We asked them what we can expect in the near and not-so-near future and how it all may change our lives.

Our panel:

Isaac Asimov, the prolific author and professor of biochemistry at Boston University's School of Medicine. His visions of the future have included the metaphysics of automatons in "I, Robot," as well as scenarios for the world's end in "A Choice of Catastrophes." Although science and science fiction are his major areas of specialization, his more than 100 books also include writings as diverse as collections of his own limericks and a remarkable, erudite volume called "Asimov's Guide to the Bible."

Robert Carver, president of Carver Corporation, manufacturer of audiophile compo-

nents. While studying for his Ph.D. in physics, Carver dropped out of school and built a 700-watt amp housed in a coffee can. These days, he is being called "the new Edison," and his latest products create an atmosphere of wonder among audio engineers. To market the first of his high-powered amps, he founded Phase Linear Corporation. Later, he sold his shares in the company for seven figures to launch the Carver Corporation, which has introduced his innovative Sonic Hologram preamplifier that simulates three-dimensionality in sound, and a 400-watt magnetic-field amplifier described as the smallest, lightest and most efficient ever.

Ray Gates, executive vice-president of Panasonic Company, with sales of one billion dollars a year in the United States. A wholly owned subsidiary of Japan's Matsushita Electric Industrial Corporation, Panasonic was introduced to the American market by Gates, who traveled around the country in 1960 with his entire product line—three radios—in a briefcase. He had no technical background, yet today the electronic gear sold under the Panasonic and Technics brand names runs a remarkable gamut from electric fans to video-cassette recorders to miniaturized radios. Gates's sales background makes him an economic realist as well as an electronics dreamer.

Steven Jobs, at 25, is founder and vice-chairman of the board of Apple Computers, Inc. A college dropout and former engineer for Atari video games, Jobs teamed up with fellow engineer Stephen Wozniak to build and sell a typewriter-sized personal computer. With an

initial investment of \$1300 and headquarters in a garage, Apple made \$200,000 the first year. Last year, the company did over \$50,000,000 worth of business. In five years, Jobs sees Apple with a half-billion-dollar share of the personal-computer market.

Henry Kloss, founder and president of Kloss Video Corporation, maker of large-screen projection TV. Kloss has sired several electronics firms that have become household names. After graduating from MIT, he founded Acoustic Research, Inc. Then, for ten years, Kloss was the K in KLH. He founded Advent, to introduce large-screen video, and stayed for ten years. Among Kloss's innovations are the first acoustic-suspension speaker (AR), the first hi-fi compact stereo system (KLH 11) and the coupling of chromium-dioxide tape and Dolby noise reduction on a cassette deck (Advent), now the standard for cassette reproduction.

Steve Ditlea, a New York-based audio/video journalist, moderated the panel.

PLAYBOY: With an electronic revolution brewing in audio and video equipment, will we see a fundamental change in how we are entertained in our living rooms?

GATES: Definitely. I think we're going to see the merging of audio and video in a single home-entertainment center, complete with a large flat screen, stereophonic sound and computer intelligence. I feel there won't be such a thing as a TV set in the home anymore. By the mid-Eighties, everything will be combined in an information screen that will



ASIMOV: "As we have more and more leisure time, people's worth will be judged not by titles but by what they do with leisure."

CARVER: "Home entertainment equipment will go right on becoming more affordable. That's been true for three decades."

GATES: "There are several large companies that have great potential for the future...RCA, Philips, Sony and Matsushita."

JOBS: "Our goal is to create a computer system where a person can use without introducing the new problem of learning how."

KLOSS: "What I think will dominate is that almost everyone will be able to see whatever he wants whenever he wants to see it."

not only serve all the basic entertainment functions but also provide information, operate appliances in the home, even provide home security.

ASIMOV: If nuclear war doesn't upset everything, we'll see more improvements in consumer electronics. These could take the form of a centralized home-entertainment module, but I have a feeling they will be more diversified. The exact form they take will depend on what the public wants and is ready for.

KLOSS: I don't agree that there ought to be one big home-entertainment center with a video screen used for entertainment, information, wallpaper and the like. These are all separate functions that don't all come together at a particular place. I see a variety of convenient and accessible products. One of them ought to be a way to watch television in a serious manner. That set shouldn't be your data output. You'll want an intense theatrical experience on one kind of set, data on another kind of set, music in any room of the house from a separate radio or stereo system.

CARVER: At the beginning of every decade, high-fidelity experts have predicted the home-entertainment center for the coming Fifties, the coming Sixties, the coming Seventies, and it still hasn't happened. The technology certainly exists for combining high-quality audio and video, but I don't know if most people are going to listen to stereo high fidelity that way. It's not clear to me that people want to listen to music and watch the performers play simultaneously. When I listen to a symphony orchestra, I sit back and close my eyes and let my mind and soul have flights of fancy. I'm not certain how much enjoyment would be added by watching the musicians. With a rock concert, that might be more fun.

JOBS: The Seventies were the decade that produced the AM/FM/alarm/organ combination. We had biorhythm calculators and Superman telephones. These products had no basis in real need. When was the last time you saw a hi-fi console in somebody's home? The reason you don't see them is because when a new turntable comes out, you can't replace the one in your console, while with component stereo you can. I don't think we'll see the integration of television and stereo. You'll just have some jacks in the back of your TV and your stereo system so you can interconnect them. Electronics in the home will remain decentralized, and that includes computers.

Nobody really wants to control the home with a personal computer. A few years ago, we thought people would want that, but it's easier and more efficient to

distribute the intelligence. You can buy a thermostat that regulates your heater with a little microprocessor that can program the temperature cycle for a week. You don't need all the intelligence in a central location. If your personal computer breaks down, you certainly don't want your home to shut down. Changes in consumer electronics will be distributed throughout the home.

PLAYBOY: You are concerned not only with what is technologically possible but also with what will be really useful in the home. Is that a new attitude? Will it mark a change in the electronic-entertainment field for the Eighties?

JOBS: We may see a real blossoming in



"The stereo of the Eighties will be able to reproduce all of the information in the sound field so that you can hear instruments precisely located in space. An orchestra will truly be spread out in front of you, three-dimensionally."—ROBERT CARVER

consumer electronics. First, the technology is expanding incredibly and you're going to see a lot of it ripple through into consumer products. Second, manufacturers are finally getting a sense of aesthetics. The designs are getting better, and so is the human-factors engineering. And, finally, people are coming around to recognizing that the products that are really interesting are the ones that have some inherent value to them. The Eighties could be a golden opportunity to create some really valuable consumer electronic products and to put some incredible tools in the hands of people.

GATES: Quadraphonic sound was a major disappointment for all of us in the audio field during the Seventies and we've become more cautious. I'm in merchandising and sales, not in the technical end, so it's easier for me to dream about what the market is ready for. I don't have to concern myself with what's technically feasible. Generally, consumers are ready for anything that will give them something they haven't got now, provided it's within their price range. I'm afraid quad represented too great an investment for most people. Personally, I'd like to see four-channel sound introduced again, at lower prices.

PLAYBOY: What piece of electronic-

entertainment gear—that you can't have now—would you most like to have?

GATES: Personally, I would like to have that audio-video combination I mentioned. To be practical, the screen should be about 50 inches wide and it should be supported by a cabinet that also contains hi-fidelity audio, a two-week programmable video-cassette recorder and a five-inch monitor screen that can be operated separately from the main screen. I would want the speakers outside the cabinet and wireless, if possible. The whole thing should have the ability to respond to voice commands. Throw in a color-video camera that weighs less than ten pounds and that records onto a self-contained cassette,

and you've just about covered all the needs I might have. I would love to get something like that as a present. The whole thing could be produced for under \$5000. Probably the most difficult part would be making the speaker connections wireless.

CARVER: Because my field is audio, I would most like a component that would replicate a live performance in my living room, with all of the emotion and presence and spatial realism. With your eyes closed, you wouldn't be able to tell it apart from an actual performance. If you added a visual component, you'd also want to make it as realistic as possible. I think that means three-dimensional video. It may well

be possible already. Instead of a three-gun color-television system, you could use a two-color system, which is hard to distinguish from a three-color system, and add depth with a third gun.

KLOSS: I'm actually quite content with what we have now. The only thing I want is rather trivial: a means to switch signals easily between audio and video components. As for a different level of sound reproduction, it's not that crucial to me. Three-D television is not something I'm waiting for. I think having the video program material when you want it will be more important in the long run.

PLAYBOY: Just what are the developments we can expect in audio during the next ten years?

KLOSS: It won't require any great innovation or new technology to find what is necessary and sufficient for the musically sensitive person to get all the enjoyment he or she wants at home. An average system at the end of the decade will still play some kind of record that will give you low noise. We won't have radically better performance than what good equipment delivers now. The records we have now won't necessarily be obsolete, though there might be some change-over toward the end of the decade to all-digital discs. Here's what I would like



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to see happen, and it's the same thing I was suggesting ten years ago: the synthetic creation of an optimal listening environment. We have different devices now that help give a greater warmth to the listening environment with reverberation, but none of these has become standardized by the industry.

CARVER: I agree. We still don't have the timing cues and the sense of three-dimensionality that can give the illusion of a live performance. Stereo as it's now presented is more or less a curtain strung between two speakers. The stereo of the Eighties will be able to reproduce all of the information in the sound field so that you can hear instruments precisely located in space. An orchestra will truly be spread out in front of you, three-dimensionally.

The average audio system by the end of the decade will be considerably different from what we have now. It will consist of a relatively lightweight, relatively small amplifier, capable of producing 200 to 500 watts per channel to capture the full dynamic range of music through even the loudest passages. Today the average stereo system uses a 30-to-50-watt amplifier delivering a signal-to-noise ratio of about 45 decibels. We'll have music systems capable of 100 decibels, eliminating virtually all background noise.

The speakers will have to be improved a lot. Only laboratory prototypes can handle the increased dynamic range without mechanical failure right now. I think we'll eventually see speaker systems consisting of two satellite speakers about the size of grapefruits for higher frequencies and a separate bass reproducer that will be small and unobtrusive enough to be hidden anywhere in a room.

PLAYBOY: Do you agree with Kloss that we may still be playing the same kind of records we have now?

CARVER: It's difficult to predict what the medium will be, whether it will be a digitally encoded disc or a record encoded for noise reduction or some new format like the Magnavision laser-beam-tracked digital disc. The disc we end up with may or may not be compatible with existing systems. I'm not sure it's going to make conventional playback systems obsolete. The commercial success of any new product depends on its compatibility

with existing gear. It's very difficult for something new to make headway in the market place if people have to throw away everything they already have.

GATES: I don't believe the records we're using today will be in existence at the end of the decade. Whatever system is adopted, it will have to be used for both sound and visuals.

ASIMOV: Whatever improvements are made in audio equipment may require a redefinition of our right to privacy. Take those big cassette players that kids play on the streets now. If you don't care for rock 'n' roll, they are impinging on your privacy. There are concerts in Central Park where the sound is magnified be-

cause that apparently covers over weaknesses in playing or intonation or balance, and somehow the magnification always gets aimed right at my apartment. Privacy is a recent concept and one that is constantly being reinterpreted in view of the changes around us. There may be new standards needed as home-entertainment equipment becomes more powerful and apartment walls get thinner.

PLAYBOY: We're already witnessing the start of a video revolution with big-screen TV, video cassettes

and discs, cable, direct transmission of telecasts into homes via satellite, and so on. How will that change our viewing habits? And what's next?

KLOSS: What I think will dominate everything is the fact that almost everyone in this country will be able to see whatever he wants whenever he wants to see it, without being restricted by the number of channels or by money. It is the equivalent of what took hundreds of years to happen with books.

The biggest and least addressed question is what people will want to see when they have access to all that material. Right now, television programming is created for just one or two viewings. People will want to fill their libraries with programs that can be viewed repeatedly. I've been looking at material that is so dense with content that you want to see it again and again.

PLAYBOY: Will that mean the end of broadcast TV and theatrical films?

ASIMOV: The proliferation of video material will stimulate creativity, not stifle it. As we have more and more leisure time, people's worth will be judged not by their titles or how much they make



"By the mid-Eighties, everything will be combined in an information screen that will not only serve all the basic entertainment functions but also provide information, operate appliances in the home, even provide home security."—RAY GATES

but by what they do with their leisure. I hope direct access to video will give everyone a greater sense of community. If we feel we're part of the world around us, we may make the attempt to solve the problems that face us on a global scale.

PLAYBOY: Won't the arrival of computers in our homes give us greater problem-solving capability—both as individuals and as a nation?

ASIMOV: Computerization in the home will have to wait for people's ability to assimilate the new technology. For instance, there are some very good computerized typewriters available now, but I won't touch one. I prefer the feel of my own typewriter. I also like to read off of a printed page. I suppose if I live long enough, I will change, too.

JOBS: It's going to get simpler to use a personal computer. As computers get more sophisticated, they'll require less sophistication on the part of the user. They'll probably never be as simple as an Instamatic camera, for instance, but by 1990 they certainly won't be more complex to use than a component stereo.

Our goal is to create a computer system that a person can use without introducing the new problem of learning how to use it.

PLAYBOY: Several of you brought major innovations to the electronic-entertainment field by starting out as basement inventors. Will the expense of research

and development eventually put an end to that kind of individual effort?

KLOSS: Sure. It will still be possible for garage operations to be successful in audio, but there's a big question whether



"Whatever improvements are made in audio equipment may require a redefinition of our right to privacy."—ISAAC ASIMOV

this can happen in video, since the initial investment in manufacturing video equipment is much higher. I'd like to see video evolve to the point where the signal that comes from the antenna or the disc player can be manipulated by the video equivalent of tuners, preamps and


amplifiers, just as with audio. Look at all the emphasis that has been placed on perfecting FM tuners and then look at how little has been done with television tuners.

GATES: Because of the size of their technical staffs and their development budgets, I think there are several large companies that have great potential for the future. I'm thinking of RCA, Philips, Sony and Matsushita.

PLAYBOY: Will a bad economy drastically affect your predictions?

CARVER: Even if inflation continues, the cost of home entertainment will decrease. The equipment will go right on becoming more affordable. That's been true for the past three decades, and I don't see the trend flattening out.

KLOSS: There will be far more money spent per capita in this decade for both video and sound equipment.

GATES: I just want to add that we've been talking in terms of usefulness here. At one time, I was in the business of selling products that were necessities, but not necessarily products for the average person to have fun with. But when you talk about an electronic-entertainment product—a television set or a stereo or a tape player—you're talking about giving people pleasure. An industry like this, with its surge of new technical achievements and the pleasure it brings, is a joy to be in. 

Give your FM wings.

This Winegard FM stereo antenna can make your FM sound positively uplifting in its clarity. A built-in solid state amplifier strengthens weak FM signals an average of 5.6 times. Precision-designed receptor bar rotates to separate signals, reducing multipath distortion, noise and interference. There's not an FM tuner made that can't be helped by the simple addition of this unique component. When people choose FM antennas as carefully as they choose outdoor TV antennas, they ask for Winegard. And suddenly the world sounds better. See your Audio Dealer for Winegard model FM-4400, or write us.



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AN ELECTRONIC TIMETABLE FOR THE '80s

Here are a few of the incredible surprises waiting for us in this decade

BY IVAN B. BERGER

1981

- AM stereo broadcasting, approved by the FCC last year, finally begins. Meanwhile, the FCC also approves TV broadcasting with two sound channels (for stereo or bilingual use).
- Four mutually incompatible video-disc systems are now on the market: the expected RCA and JVC/Matsushita systems, the laser-scanned Philips/MCA/Pioneer/IBM system (on a nationwide basis) and a fourth system from an unexpected source.
- Video-text broadcasting begins as a commercial service, bringing still pictures and "printed" data to the nation's TV screens. Two systems appear: Teletext, sending limited amounts of information by broadcast TV signal; and Viewdata, using phone lines to carry a greater variety of information.
- The French begin substituting computer terminals for printed phone directories.

1982

- Growth of home-computer use and intercomputer networks leads to strong competition for the U.S. Postal Service, as millions gain ability to transmit "written" messages electronically. The Postal Service, which had just raised postal rates to cover cost of mail flood, now raises them again to compensate for reduced volume.
- First flat TV picture tube reaches market—still small, black and white and expensive.
- Stereo/bilingual TV broadcasts begin.
- Appliances now include built-in decoders for remote-control pulses sent over house wiring.
- All-digital audio-disc systems based on video-disc technology reach the market. Unwary listeners burn out speakers trying to use all the dynamic range on the new discs.

1983

- Reference books begin to fade from market, gradually supplanted by data banks accessible from home computers for small fees.
- Two-way cable systems become widespread. Viewers can vote in opinion polls, vote on programs and films to be shown (from an onscreen "menu"), order goods seen in commercials and call for emergency assistance, all via cable.

1984

- Picture-Phone service finally arrives, using same telephone/television link-up as Viewdata. After some embarrassments, service is revised so that neither camera nor view screen becomes active until it's turned on by user, eliminating the need to dress for phone calls and reducing random calls from exhibitionists. Phone calls between teenagers with Picture-Phone (Peepy for short, from its initials) grow more frequent. Party lines grow popular again.
- First flat-tube color TV screen arrives on market, still small and expensive.
- Bookstores stop stocking all but most-popular books; books in low demand are still available, though, on microfiche sheets "printed" rapidly by a computer in the store; text is transmitted to store from publisher's computer.
- Game playing by computer network becomes a national mania; players all over the country match wits and skills in fast-paced games that end in minutes, and extended games that continue for days or weeks, players signing in and out as they continue.
- Specialized cable channels grow: Viewer can tune in to all-news, all-comedy, all-Western, all-sports, all-porno and similar channels.

1985

- Facsimile printers tied into home-video systems give instant print-outs of newspapers and other information; printer even recycles its own paper. Users can scan all headlines and lead paragraphs on their screens, then request print-outs of only the stories that interest them. System huts available stories in order of viewer's priority—sports first and stocks last, for example.
- Appliances, while still sporting control panels and remote-control interfaces, now almost universally accept vocal commands, too. They can be adjusted to respond to all voices or only to specific ones.
- Audio discs with "periphonic" sound arrive, combining surround sound with a sense of height; FM stations finally become interested in four-channel broadcasting (legal since 1981).
- High commuting costs accelerate the drive to "distributed offices," which means workers stay home, communicate with each other from home-computer terminals.

- Flat color-TV screens grow in size, shrink in price, gain in popularity.
- Video camera with built-in recorder—as small as old home-movie cameras—makes its debut. No more bulky side packs.

1986

- Bookstores begin printing "instant books" on recyclable paper, as well as instant microfiches. New books can be printed in the user's choice of type sizes—bigger for easier reading, smaller for easier carrying.
- Total Ambience Control for home audio systems lets listener dial in precisely the room acoustics he wants, either by personal taste or by calling up the name of the concert hall whose sound he wants to duplicate.
- TV screens grow to wall size, making movies into MOVIES!

1987

- Hi-fi systems linked to computer data networks finally conquer "music lover's itch." Whistle or hum a tune and the system will tell you what it is and offer to play a recording of it.
- Stereo Podium accessory lets listener alter the performance with his control baton while listening to a record.
- Owners of wall-sized TV screens turn them into "wallpaper" with fixed or moving patterns—using new pattern generators.

1988

- High-resolution video arrives, after years of complaints from viewers watching old-fashioned, coarse, 525-line pictures on wall-sized screens. Using multiple blocks of cable-TV channels and special tuners and projectors, new system receives 2100-line pictures.
- Flat-screen wrist television arrives.

1989

- Flat speakers appear to share wall space with flat video screens.
- The kitchen computer arrives: not just the recipe bank long predicted but a system that checks groceries as they enter and leave kitchen shelves, keeps a running inventory and suggests menus on the basis of food on hand, diet preferences, food prices.
- Holographic (three-dimensional) TV appears.







PLAYBOY'S ULTIMATE ELECTRONIC PAD

*Making coffee is one way to use electricity;
here's a cozy little place that offers
a few interesting alternatives*

THESE MODEST bachelor digs may look a trifle futuristic, but there's nothing here you couldn't build into your own little mountain lair next year—with some help from your neighborhood architect, a few Japanese electronic engineers and that fat raise you've had coming for some time. On the morning of a typical non-workday, you get in some reading while floating restfully along on your **VOICE-COMMAND MOTORIZED POOL CHAISE**, like the woman in our picture. After some early-afternoon drinks from the **POOL-SIDE ELECTRONIC BARTENDER** and a little afternoon dip, you try your hand at some of those sophisticated **ELECTRONIC GAMES** you now own. Then you and your date decide to watch a movie on video tape in the **PRIVATE THEATER MODULE**, where the refreshments are sandwiches and sing-ers. (You're gently warned if unexpected guests enter; **ELECTRONIC TILES** on the room's perimeter are sound keys that emit soft notes and subtly colored lights when visitors walk on them.) Now it's early evening, and you're not hungry enough for dinner, so you decide to relax in the **SOFA-VATOR**, that clear-and-cushioned plastic dish for two (or more?) that rises vertically along the **ENTERTAINMENT COLUMN**. At level one, you consult the nine-channel display of your built-in **SHARP MULTIVISION** screen to decide which program you want to watch on the adjacent bigger screen. But you don't turn off the Multivision, because you want to keep track of what you're missing. (That **DISH ANTENNA** outside your window gives you access to the hundreds of international channels now beamed down by satellite.) Finally tiring of conventional TV, you move the Sofa-vator up the column to its second level, where the electronic organ (the **WIDE-SCREEN SCENE-OPHONIC**, if you must know; and you should—you named it yourself) awaits your tender touch. Playing a few bars of this and that brings not only the expected dulcet tones but panoramic scenes of Alpine sunsets and wild horses romping across wooded valleys. At the third level, if you care to pause there before disappearing into the upstairs rooms (for candlelight dinner, of course), you flatter your date by showing her—on video cassette—a kind of electronic family album of her past, a visual memory book made up of snapshots and clippings, perhaps pictures of a few people she hasn't seen in years. It's the kind of attention even she is not accustomed to receiving. But it's nothing, really, compared with dinner upstairs. *Bon appétit!*

(Alternate scenario: She's incensed by your invasion of her privacy, slaps your face and goes home. You go back downstairs to play solitary pinball or put on a few records while you contemplate what went wrong. That is, unless your friend on the motorized chaise is still around. In which case, there's many an alternate scenario still to be played out. Isn't there?)



AROUND the Games office, a familiar musical beeping can be heard behind closed doors most any time of the day or night. Within the past year, a more varied range of challenges, innovations in sound and visual effects and an increased selection of skill levels have transformed our casual interest in electronic games into a near frenzy.

So here are our favorite hand-held, video, computer and arcade games—those for which we can't seem to stock enough batteries. Are we addicted to these challenging gizmos? Well, we haven't given up food or sex, but sometimes we do have to be reminded of both.

IN THE BEGINNING, IT WAS SIMON & MERLIN

Follow the Leader of "Follow the Leader": **SIMON**, by Milton Bradley (\$30–\$40). Well on its way to becoming the first electronic classic, Simon is the leader who strings you along on flashing lights and musical tones. Simpletons (like us) who fail to match Simon's ever-increasing sequence get the electronic raspberry. The concept was so popular when introduced that there are now lots of games on the market *like* Simon. We'll take the original, please.

The Versatile Fellow: **MERLIN**, by Parker Brothers (\$30). Held comfortably in hand, Merlin has all the look and feel of a *Star Trek* communicator. Merlin will play you at Tic Tac Toe, Blackjack, Echo (a variation of Simon), Magic Square (a logic game) and Mindbender (a variation of Mastermind). It even has a music-making game.

SUNDAY AFTERNOON FEVER

Batter Up!: **BASEBALL 3**, by Entex (\$45). Baseball 3 is by far the best electronic sports game. You can play solitaire against the computer or alternate fielding and batting with an opponent. Many different features make this machine a very faithful simulation of its sport: six different pitches, bunts, foul balls, stealing second base, defending against the steal, making double plays, as well as hitting a sacrifice fly. (Stadium steaks and suds not included.)

Welcome to the Super Bowl: **FOOTBALL II**, by Mattel (\$30). This is the only electronic football game that allows the ball carrier to run backward in an attempt to draw the clever computer defense out of position and break for an open-field run or a long pass. Punting, field goals and the danger of safeties are all part of the game plan.

COMPUTER OPPONENTS

The Backgammon Wizard: **OMAR III**, by Tryom (\$120). As its name implies, this microcomputer opponent was endorsed and partially developed by backgammon expert Omar Sharif. No larger than a pocket calculator, requiring no special

THE BEST OF GAMES



Simon: The Original



Merlin: Game for Anything



Baseball 3: Some Simulator



Imagination Machine: Go Figure

*The editors of
our very own
GAMES magazine
choose the most
devilish electronic
distractions their
playful, inventive
burgeoning world
has given to its
public—so far*

board and programmed to follow tournament rules, this AC- or DC-powered game automatically adjusts its style of play from classical to modern theory, depending on its opponent. (We discovered that the hard way, *after* Omar doubled our stake!) Omar III comes with a deluxe, tournament-size backgammon set.

Not Rated? You're Mated!: **THE VOICE CHESS CHALLENGER**, by Fidelity (\$350-\$375). Advertised as "the first thinking chess game that speaks to you," Voice Challenger plays well enough to prove that slogan an understatement by any wood pusher's standards. It "knows" 1200 book opening moves, and thereby does not get into trouble early in the

game; in its teaching mode, Challenger will display *your* next move. A cold computer voice speaks Challenger's moves as well as repeats your moves aloud, and when asked for a suggestion, it will give you one. Intimidating? You bet. But it plays the best game of chess commercially available.

THE HOME VIDEO ARCADE

Video Game Plus Computer: **THE IMAGINATION MACHINE**, by APF (\$600). The Imagination Machine—half programmable video-game system and half home computer—truly lives up to its name. It has a well-designed keyboard input and a

good selection of software. Working with APF's preprogrammed cartridges and cassettes such as Income Tax, Checkbook Balancing and Electronic Artist (\$19.95-\$29.95) is a simple matter; and it's not much harder to write your own programs. The video-game cartridges (same prices) feature high-resolution graphics and varying skill levels. Our favorites: Blackjack (we always lose), Baseball (we always win) and Brickdown (we are hopelessly addicted).

Nice for the Price: **VIDEO COMPUTER SYSTEM**, by Atari (\$199.95). Atari's V.C.S. is an attractive, simple, functional machine, and there is nothing more reliable in its price range. Most impressive is the variety offered by its line of more than 40 game cartridges (\$21.95-\$39.95) for a total of nearly 1500 game variations. Some of the best are Space Invaders, Air-Sea Battle, Breakout, Basketball and Surround.

ASSORTED ADDICTIONS

Instant Addiction: **MICROVISION**, by Milton Bradley (\$50). At long last, here is a hand-held electronic-game system with the appeal of the larger video units. Eight cartridges—Bowling, Pinball, Connect 4, Star Trek Phaser Strike, Vegas Slots, Mindbuster, Sea-Duel and Baseball—are available for about \$20 each. Blockbuster, a terrific version of the coin-operated game Breakout, comes with the system. Just try to put it down!

Beware the Invasion: **MASTER BLASTER**, by Bambino (\$35). Simple to learn, difficult to master and a blast from start to finish. Flying saucers float gently (level one) or zip violently (level three) down the screen as you attempt to explode them by launching and controlling LED rockets. That's all there is to Master Blaster, but we've gone through a lot of batteries playing with it.

Make Friends and Enemies: **ASTRO**, by Kosmos (\$49.95). Guaranteed to turn an innocent party into a free-for-all verbal melee, this astrological computer instantly plots your horoscope. Among other things, it will compare any two dates from the 20th Century for compatibility. But if you're not prepared to take in stride what Astro tells you about yourself and loved ones (mostly about compatibility), at least be prepared for divorce or a libel suit.

The Logical Alternative: **SUPERSONIC ELECTRONIC MASTERMIND**, by Invicta (\$30). For the reason-minded who like games that can be played solo, this one is a must. Designed to be carried like a pack of cigarettes, the machine hides a code in the form of a three-, four-, five- or six-digit number and gives you a certain number of guesses to puzzle it out. Perfect for traveling, the game of Mastermind is known throughout the world. This updated version has sound effects.

— PHIL WISWELL



Football II: Sacking Allowed



Omar III: Gammon Wizard



Voice Chess Challenger: Check!



Microvision: High Addiction



84 Master Blaster: Simple, But...



Electronic Mastermind: Solo Swivets

Do your finger tips twitch uncontrollably every time you slink past the neighborhood arcade? Are your eyes glazed from waiting in line for your favorite pinball machine to become available? Has your spouse threatened separation if you don't stop feeding your (and her) lunch money to Silver Ball Mania? Is body English a concept that you understand and wish to develop?

If you answered yes to any three of the four questions above, then you are a victim of pinball fever. According to the Surgeon General, thousands are stricken every year and don't know it. Alas, there is no known cure. Giving in may be the best course. Depending on your budget, you may even want to buy one.

SHARPSHOOTER, by Game Plan, Inc. (\$1795). A very precise game of aim and strategy, Sharpshooter was designed by pinball aficionado Roger Sharpe. Each target is labeled with a letter, and by spelling S-H-A-R-P or S-H-O-O-T-E-R or both, you can rack up a lot of bonus points. There's a free ball for reaching 350,000, but for our quarters, it might as well be 350,000,000.

Bally's **SPACE INVADERS**...the pinball (\$2195). This is one of the best of the new wide-body machines. An easy-to-control game with lots of action on a playfield six inches wider than conventional pinball games, Space Invaders also contains some of the best special effects you can find (like its predecessor, the arcade video game of the same name). The infinity effect of the back-glass lights and the accelerating heartbeat sound/vibration increase hypnotically with the score, so you can tell a neophyte from a pro at the other end of the arcade.

GALAXIAN by Midway/Bally (\$2395). Video Space Invaders (the most popular arcade game ever) has been taken to the ultimate in Galaxian. Phalanxes of invaders still march incessantly down-screen toward the eventual destruction of the player's laser cannon as in the original game. But here's the difference: Galaxian's invading spaceships are not only in color (you have to blow them out of the sky) but they don't stay locked in a group. Suddenly, two or three ships break from the formation, spewing lethal dots of light! Recommended for the frenetic with strong heart and low blood pressure.

ALIVE!, by Brunswick (\$650-\$700). Less sophisticated than the other machines listed, Alive was designed specifically for home use. But the actual play of the game mechanism does live up to adult expectations with a good number of active bumpers, kickers and targets. One to four players each get five balls, with a free ball available after a certain score. It's all solid state and very simple to assemble. — PHIL WISWELL

PINBALL FEVER!

The silver ball menace, killing your change-purse with its song



Sharpshooter: From a Master Fan

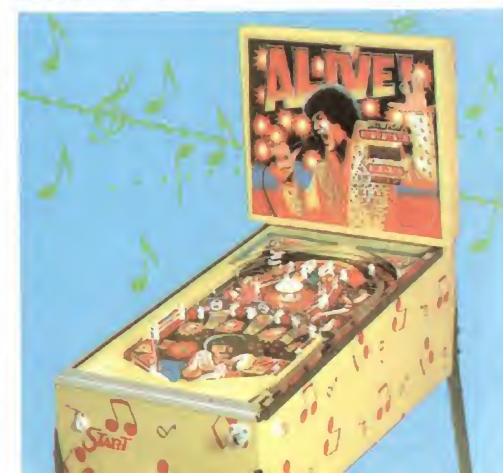


Space Invaders: Lucrative



Galaxian: Invaded Again

Alive!: Active Stuff



TEN YEARS AGO, if you wanted a computer to play chess with, you would have had to settle for a plodding giant that took several days to make a move and didn't even play a very good game. The giant, called ENIAC, also used 18,000 vacuum tubes, weighed 30 tons and filled a room the size of a basketball court.

Today, by comparison, a personal computer that takes up no more space than a typewriter will give you a run for your money at chess, taking only seconds per move. And by 1990, computer technology will have advanced another thousandfold; a personal computer may slip into your pocket as easily as a calculator does now, and it will play a much better game of chess, too.

Government and industry sources claim that by the end of the decade, 70 to 90 percent of all American homes will contain, and may be run by, a personal computer. It will be used with greater frequency than the telephone and probably will cost about as much as a small TV set. "OK," you say, "in five or ten years, I'll need a computer. But what would I do with one now?"

Here's only *part* of the answer, but you'll see what we mean.

One of the first useful things you'd probably do would be to transfer all your financial and tax information from paper to computer memory, where you can easily keep it up to date and get the exact data you want when you want it. For example, you might ask your computer how much you and your spouse would save (or lose) by filing separate income-tax returns. Or how much money is left in your 1980 clothing budget. Or which of two houses is the better buy in the long run, considering their different payment schedules.

But don't stop there. You can also buy or write programs that mathematically analyze the stock market day by day, that chart your car maintenance, that maximize efficient use of energy in your home, that forecast the weather, that determine probabilities for gambling games—and the list is never-ending. Really.

For some, the cure for their own computer confusion will involve much more than reading articles; they'll have to try out the Apple II and Commodore's PET before they believe what others say. Those who are put off by the thought of expensive or complicated equipment probably should take another look. There are new computers on the market—such as APF's Imagination Machine, the Atari 400 and Mattel's Intellivision—designed to appeal to both a low bank balance (say, \$600) and a lack of technical training.

Quasar's Micro Information System, available in December, is basically a hand-held microcomputer with modular peripherals (printer, modem, etc.) that

THE FRIENDLY HOME

Like any new friend, it takes some knowing—but it's worth the trouble



The Apple III, a system for serious home or business use, is big brother to Apple II, which is a slightly less serious but a lot less expensive at \$970, compared to III's \$4300 price tag. Both are from the company that has pioneered the personal-computer field during its five-year history.

Intellivision (\$550), from Mattel, is one of the least expensive home computers, offering a host of graphically appealing programs, mostly dealing with entertainment and education. As with APF's Imagination Machine, you can purchase Mattel's MasterComponent (video-game system), then decide whether to add the computer keyboard.



COMPUTER

THE SOURCE: A COMPUTER BANK EVERYONE CAN USE

The Source is not only an extensive electronic library of information stored by powerful computers and available to anyone with a home computer and a modem. It's also a way to wire yourself in to the world—especially its news and other subscribers to The Source. Initial hookup charge is \$100, and from there you pay only for time used (\$15 per hour until six P.M., \$2.75 per hour thereafter).

The New York Times Consumer Data Base is only one contributor to The Source's master index of more than 600 subjects, providing such information programs as acupuncture, the Equal Rights Amendment, Medicare, science fiction, even white-collar-crime data. Sure, you could find all this information at your library, but you'd have to dig for it.

The Source also can get you the latest news and sports information from United Press International minutes or hours before it breaks on TV; it can transmit 10,000 words from New York to Los Angeles for about ten dollars in the time it takes to type them; it can check and book airline and hotel reservations (charged automatically to major credit cards), locate particular real-estate or business opportunities in any area, monitor the stock exchanges and access a great deal of other information as well. Write to: The Source Telecomputing Corporation of America, 1616 Anderson Road, McClean, Virginia 22102, or call 703-821-6660.



The Atari 800 Personal Computer System (\$1080) is well known for its beautiful color graphics and wonderful games—but we expected as much from Atari. What we didn't expect were dual-cartridge capability, 16 colors and four octaves of music synthesizer.



The PET 2001-8K Personal Computer (\$795), from Commodore International, has a video display mounted over the keyboard so you can use the computer without pre-empting the family television set. A full line of peripherals and accessories includes a voice synthesizer.



Nixdorf's LK-3000 language translator has been transformed into a traveling computer that can access bigger computers with the help of the LK-2010 phone module. \$335 for both units.



Quasar creates a briefcase computer with its Micro-Information System (about \$2000). A hand-held computer terminal and optional programmable memory, printer, telephone modem connect to make a powerful computer.

can be carried inside a briefcase. Target price for the main unit alone is \$400, and Quasar's software programs will be about half the size of a domino! The system can function as portable typewriter, calendar/clock, memory bank, music synthesizer or remote terminal for communicating with other computers by phone. It's a brain that has legs!

The business and scientific communities are already hooked on the more expensive equipment, and now the companies are coming after you, the individual consumer. To get you, they know they must offer hardware that's easy to handle. APF, Atari and Mattel would have you believe that if you can operate a stereo system, you can operate their home computers. And using preprogrammed software tapes—the key to mass-marketing personal computers—they are correct. Essentially, you just plug in a cassette tape and go.

Personal computers offer the best electronic games available outside the arcade (Apple's color graphics are particularly impressive), and therefore have received an unfortunate (to some) reputation as "toys for big boys." True, you may want to show your friends a game of Spacewar rather than show them how you balance your checkbook; but you'll know in your heart that your computer's game-playing ability is pure gravy. The meat and potatoes is having your very own electronic brain. In this day and age, information is power, and the computer is the best way to sort and store it.

APF, Apple, Atari, Mattel and Commodore all market expander options with their hardware, so that the user neither starts with too large a system nor ends up with one that's too limiting. The most exciting of these options is the modem (modulator/demodulator), a device that allows you to tie your little computer into a larger computer or data bank anywhere in the country via telephone.

With the knowledge and power that computers will place at his finger tips, the journalist will have it made. So will the doctor, the lawyer, the accountant, the teacher, the investor, the salesman and many others. Personal computers are showing up in department stores and other retail outlets at an increasing rate, and by the end of this year, more than half a million units will have been sold for home use.

Consider your needs carefully before you decide to own the first computer on your block. The growing number of reliable systems makes it important to shop around, because one system will feel more comfortable to use than another. Try out each computer in your price range. You don't want to go home with a beautiful but uncomfortable pair of shoes. Nor a beautiful, unsuitable computer.

—PHIL WISWELL



Momma never told me there'd be nights like this.

Momma never knew about The Imagination Machine. It's a personal computer system, the best investment I ever made. Tuesday night Eileen dropped in and we balanced her checkbook on it. (If you knew Eileen, you'd know that's a first.)

Wednesday, Judy and I computed the principal and interest on the new car she wants to buy.

And my 14-year-old cousin, Chuck, is threatening to stop by three nights a week to learn typing on *my* Imagination Machine. I'd rather hold a "Space Destroyers" tournament.

Now, understand — I didn't buy my Imagination Machine to improve my social life. I got it because the computer helps me with my business, helps to manage my personal financial affairs...and it entertains me.

I picked the Imagination Machine over the other home computer systems because, at \$599,* it offered more than other computers costing a whole lot more.

Maybe one day, I'll learn to program it myself. But meanwhile, there are plenty of programs — business, educational and entertainment — available from APF Electronics, the folks who make The Imagination Machine.

The Imagination Machine can do for you what it's done for me. And don't forget to chill the champagne!

For more information about The Imagination Machine, call 800-223-1264 TOLL FREE. New York residents call 212-869-1960.

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ELECTRONIC CALENDAR

*Here's where you can see
the new equipment first!*

The New York Hi-Fi Stereo Music Show, New York Statler Hotel, New York, October 3-5, 1980. The first look at the new fall goods. One of the largest shows open to the public. Many manufacturers preview their goods here before going to the winter trade extravaganza in Las Vegas. This year, there will be the first demonstration of AM stereo.

The San Francisco Hi-Fi Stereo Music Show, San Francisco Civic Auditorium, November 7-9, 1980. Over 100 manufacturers and Bay Area retailers will appear.

The Washington Hi-Fi Stereo Music Show, Hyatt-Arlington Hotel, Washington, D.C., February 6-8, 1981. A grand salute to technological advance, with a half-mile's worth of the cream of the current audio/video crop.

The Detroit Hi-Fi Stereo Music Show, Cobo Hall, Detroit, March 13-15, 1981. Motortown's special brings together the latest in mobile and stationary sound, plus the new directions and products for audio-video hook-ups.

National Small Computer Show, New York Coliseum, October 30-November 1, 1980. In its fourth year, this show features software, hardware. Also: seminars on computer myths and limitations, plus investment analysis and household uses.

National Home Entertainment Show, New York Coliseum, New York, November 21-23, 1980. This first annual undertaking by the publishers of *Videography* and *Home Video* will provide everything you've always wanted to know about home video and video production, from the latest in equipment to how-to workshops on a wide variety of production problems and techniques.

Sixth West Coast Computer Faire, San Francisco Civic Auditorium and Brooks Hall, San Francisco, California, April 3-5, 1981. Just up the canyon from Silicon Gulch, and with more than 300 exhibits and 60 speakers, this annual exhibition is the largest demonstration of inexpensive and high-class computer power to the people.

Personal Computing 1981, Philadelphia Civic Center, Philadelphia, Pennsylvania, August 28-30, 1981. Matriculate at "Personal Computing College," 81 hours of free seminars on microcomputers, and examine the full line of state-of-the-art home-computer hardware. This year's show includes an antique-computer exhibit. 